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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,949	01/16/2004	Wen-Jong Lin	51833/DBP/C982	6172
23363 7590 01/03/2007 CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068			EXAMINER BEHNCKE, CHRISTINE M	
			ART UNIT	PAPER NUMBER
			3661	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/03/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/758,949

Applicant(s)

LIN ET AL.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/16/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948).
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/15/04, 1/16/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: See Continuation Sheet.

### DETAILED ACTION

1. This office action is in response to the application filed 16 January 2004, in which claims 1-20 were presented for examination.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 12-14, and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hulstedt, US 5,441,437.

(Claims 1, 19, and 20) Hulstedt discloses a system, a method, and a workpiece to be treated according to the method for treating a workpiece, comprising: a robot having a holder for holding the workpiece and traversing the workpiece along a predetermined path (column 1, lines 35-56); a treatment device for performing a treatment on the workpiece (moveable finishing tool 16), the treatment device having a treatment tool for contacting the workpiece at least one point along the path (column 4, line 49-column 5, line 27); a contact force measurement device for providing information on the actual contact force between the treatment tool and the workpiece (column 3, line 61-column 4, line 5); a position measurement device for providing information on the actual position of the treatment tool (column 5, lines 28-46, column 7, lines 6-19); and a controller in communication with the robot and the treatment device for controlling the system in accordance with predetermined position data and predetermined contact

force data, based on the predetermined path of the workpiece, the controller being responsive to the actual contact force information and the actual position information (column 8, lines 7-38, column 2, lines 39-44), the controller receiving the actual contact force information from the contact force measurement device and the actual position information from the position measurement device (column 8, lines 7-38, figure 5).

**(Claim 2)** Hulstedt further discloses a robot instructor in communication with the robot for instructing the robot along the predetermined path, under the control of the controller (remote controller 105, figure 5).

**(Claim 3)** Hulstedt further discloses wherein the controller uses the predetermined position data to control the robot (column 1, lines 35-56, column 5, lines 18-27).

**(Claim 4)** Hulstedt further discloses wherein the controller uses the predetermined contact force data to control the treatment device (column 6, line 58-column 7, line 19).

**(Claim 5)** Hulstedt further discloses wherein the controller is a computer (column 8, lines 7-38, figure 5).

**(Claim 6)** Hulstedt further disclose wherein the treatment tool comprises a blending wheel (Abstract, figure 1).

**(Claim 7)** Hulstedt further discloses wherein the contact force measurement device is mechanically attached to at least one of the holder and the treatment device (column 3, line 61-column 4, line 5, column 7, line 63-column 8, line 6).

**(Claim 8)** Hulstedt further discloses wherein the contact force measurement device comprises at least one of a force sensor attached to the robot and a force gauge attached to the treatment device (column 3, line 61-column 4, line 5, column 7, line 63-column 8, line 6).

**(Claim 9)** Hulstedt further discloses wherein the position measurement device is mechanically attached to the treatment device (column 5, lines 28-46, column 7, lines 6-19).

**(Claim 10)** Hulstedt further discloses wherein the position measurement device comprises at least one of a force gauge and a displacement sensor (column 5, lines 47-65).

**(Claim 12)** Hulstedt further discloses a decoupling mechanism in communication with the controller and mechanically attached to the treatment device for adjusting the position of the treatment device and the contact force between the treatment tool and the workpiece (figure 1, column 4, line 52-column 5, line 8).

**(Claim 13)** Hulstedt further discloses wherein the decoupling mechanism comprises an actuator and a cam (Figure 1).

**(Claim 14)** Hulstedt further discloses a database for storing the predetermined data (memory 108).

**(Claim 17)** Hulstedt further discloses wherein the treatment device is a finishing device and the treatment tool is a finishing tool (column 4, lines 39-52).

**(Claim 18)** Hulstedt further disclose the system is for finishing a workpiece (column 4, lines 39-52).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hulstedt in view of Derwent Abstract publication 2000-145737.

Hulstedt discloses a general finishing tool to treat workpiece and remove excess marks, burrs, parting lines, and etc. (column 1, lines 16-20) wherein a high accuracy of the surface finish is required. Hulstedt does not disclose specifically that the workpiece comprises a turbine blade. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the system of Hulstedt on a turbine blade that must be finished to high accuracy specifications. Further Derwent Abstract

publication suggests the use of a general belt grinder/abrasion machine is used for a turbine blade as well as other workpieces such as orthopedics or welds.

***Claim Rejections - 35 USC § 103***

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hulstedt in view of DeCord, Jr., US 6,876,899.

(Claim 15) Hulstedt discloses the system for treating a workpiece as applied to claim 1, wherein the robot uses a predetermined path for treating the workpiece (column 1, lines 35-56). Hulstedt does not teach the use of an optical sensor for scanning the surface of the workpiece. However, DeCord teaches a system and method of finishing casting, removing excess material using grinding methods including a rotary grinder and a belt sander, further comprising an optical sensor (measurement device 25) for scanning the surface of the workpiece and providing profile data of the workpiece for determining the predetermined path (column 3, line 65-column 4, line 23).

(Claim 16) DeCord further teaches wherein the optical sensor comprises a laser emitting sensor with a controllable laser beam incidence direction, to be substantially normal to the surface of the workpiece at a scanning point of the workpiece surface (column 3, line 65-column 4, line 23, figures 1, 3a and 3b).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system of Hulstedt with the teachings of DeCord because, as DeCord suggests, for finishing workpieces to small error tolerances where the multiple workpieces that comprise significant variation of excess material, it is more efficient and accurate to inspect the workpiece after the relationship between the grinder and robot

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with workpiece has been established to maintain required tolerances (column 1, line 19-column 2, line 3).

**Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

*Michael J. F.* 12/26/06  
REGISTERED  
PATENT EXAMINER



Continuation of Attachment(s) 6). Other: Derwent Abstract Publication RD427023A.